

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

BEST AVAILABLE COPY

Applicant's or agent's file reference TJ0402 - PCT	FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No. PCT/JP2004/008516	International filing date (day/month/year) 10/06/2004	(Earliest) Priority Date (day/month/year) 11/07/2003
Applicant TOYOTA JIDOSHA KABUSHIKI KAISHA		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☒ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 2, 3

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/008516

BEST AVAILABLE COPY

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01L29/739

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 452 228 B1 (HARA KUNIHICO ET AL) 17 September 2002 (2002-09-17) column 16, line 40 - column 17, line 54; figures 19,20	1,2
X	US 5 866 931 A (ROSSEN REBECCA ET AL) 2 February 1999 (1999-02-02) column 6, line 16 - line 40; figure 6	1,2
X	US 5 753 942 A (SEOK KYUNG-WOOK) 19 May 1998 (1998-05-19) column 5, line 4 - line 27; figures 5a,5b	1,2
X	EP 1 093 168 A (SHINDENGEN ELECTRIC MFG COMPAN) 18 April 2001 (2001-04-18) paragraphs '0116! - '0120!, '0134!, '0135!; figures 25a,25b,31,32a,32b	3,4
	-/--	

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

2 December 2004

Date of mailing of the international search report

13. 12. 2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Franche, V

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/008516

BEST AVAILABLE COPY

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 271 562 B1 (GRAF HEIMO ET AL) 7 August 2001 (2001-08-07) column 6, line 41 - column 9, line 2; figure 1 -----	5,6
X	US 6 008 092 A (GOULD HERBERT J) 28 December 1999 (1999-12-28) column 3, line 28 - column 6, line 34; figures 1,2 -----	5,6
X	US 5 451 531 A (TOMOMATSU YOSHIFUMI ET AL) 19 September 1995 (1995-09-19) column 10, line 59 - column 11, line 25; figure 5 -----	5,6

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP2004/008516

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6452228	B1	17-09-2002	JP 11330464 A 30-11-1999
			DE 19900171 A1 08-07-1999
			JP 11251592 A 07-09-1999
			SE 519692 C2 01-04-2003
			SE 9900008 A 06-07-1999
			US 6165822 A 26-12-2000
			JP 2000200907 A 18-07-2000
US 5866931	A	02-02-1999	US 5410170 A 25-04-1995
US 5753942	A	19-05-1998	KR 206555 B1 01-07-1999
			DE 19654692 A1 03-07-1997
			JP 9199727 A 31-07-1997
EP 1093168	A	18-04-2001	JP 2001185725 A 06-07-2001
			EP 1093168 A2 18-04-2001
			US 6459128 B1 01-10-2002
US 6271562	B1	07-08-2001	DE 19808348 C1 24-06-1999
			EP 0939446 A1 01-09-1999
			JP 3124524 B2 15-01-2001
			JP 11289091 A 19-10-1999
			TW 434906 B 16-05-2001
US 6008092	A	28-12-1999	DE 19704996 A1 30-10-1997
			FR 2745952 A1 12-09-1997
			GB 2310082 A ,B 13-08-1997
			IT MI970242 A1 07-08-1998
			JP 10027807 A 27-01-1998
			SG 54461 A1 16-11-1998
			TW 445547 B 11-07-2001
US 5451531	A	19-09-1995	DE 69314368 D1 13-11-1997
			DE 69314368 T2 19-03-1998
			EP 0561267 A2 22-09-1993
			JP 2949001 B2 13-09-1999
			JP 6013620 A 21-01-1994
			US 5321281 A 14-06-1994

REST AVAL ARI E COPY